

CLAIM AMENDMENTS

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1. (CURRENTLY AMENDED) A respiratory apparatus for delivering a flow of air to a patient suffering from sleep disordered breathing comprising:
a blower that generates a flow of pressurized air;
a patient interface adapted to deliver air from said blower to the patient;
a control unit coupled to said patient interface and adapted to sense a parameter characteristic of said flow of air, said control unit including an display adjusting circuit means adapted to operate on said parameter to generate a signal indicative of the breathing pattern of the patient; said control unit further including a first averager used to determine a first average of said signal, said display adjusting circuit means being adapted to restrict said signal within a predetermined display range in response to said first average; and
a display adapted to show said signal.

2. The respiratory apparatus of claim 1 wherein said control unit includes a pressure sensor adapted to detect a pressure signal indicative of a pressure within said patient interface, said parameter comprising said pressure signal.

3. The respiratory apparatus of claim 1 wherein said control unit includes a baseline generator generating a baseline signal, said signal being related to said parameter and said baseline signal.

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4. (CURRENTLY AMENDED) The respiratory apparatus of claim 3 wherein said baseline generator is coupled to said first averager and ~~is adapted to~~ has coded control instructions to set said baseline signal to a value related to said first average.

5. (CURRENTLY AMENDED) The respiratory apparatus of claim 1 wherein the display adjusting circuit means includes coded control instructions, and wherein said first averager is adapted to generate said first average over a first time period, and wherein said control unit further includes a second averager generating a second average of said signal over a second time period which is much shorter than said first time period, and wherein in accordance with the coded control instructions said display adjusting circuit means adjusts said signal in a first manner dependent on said first average in one set of conditions, and adjusts said signal in a

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second manner dependent on said second average in another set of conditions.

6. (CURRENTLY AMENDED) A respiratory apparatus used to provide air under controlled conditions to a patient with a pulmonary deficiency, said respiratory apparatus comprising:

- a blower that generates a flow of pressurized air;
- a patient interface that delivers said flow of air to the patient;
- a control unit coupled to one of said blower and patient interface to derive a parameter indicative of said flow of air and the breathing of the patient, said control unit having a signal processing unit that processes said parameter to generate a respiration signal indicative of said breathing and an display adjusting circuit means adapted to determine an average value of said ~~output~~ respiration signal and to adjust said respiration signal based on said average value to restrict said respiration signal to a predetermined display range; and
- a display adapted to show said respiration signal.

7. (CURRENTLY AMENDED) The respiratory apparatus of claim 6 wherein said display adjusting circuit means is adapted to determine a short term average value and a long term average value of said respiration signal based on a short and a long time period, respectively, said display ~~adjustment~~ adjusting circuit means being constructed and arranged to adjust said respiration signal in one of a first manner dependent on said short term average value and a second manner dependent on said long term average value.

8. (CURRENTLY AMENDED) The respiratory apparatus of claim 7 wherein said display adjusting circuit is adapted to generate a baseline signal, said baseline signal being subtracted from said parameter to generate said respiration signal.

9. (CURRENTLY AMENDED) The respiratory apparatus of claim 8 wherein said display adjusting circuit means is adapted to set said baseline signal to a first value when an absolute difference between said baseline signal and said long term average value exceeds a first threshold.

10. (CURRENTLY AMENDED) The respiratory apparatus of claim 9 wherein said display adjusting circuit means is adapted to set said baseline signal to a second value when an absolute difference between said baseline signal and said short term value exceeds a second

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cont'd threshold.

11. The respiratory apparatus of claim 10 wherein said first threshold value is related to said predetermined range.

12. The respiratory apparatus of claim 10 wherein said second threshold value is related to a pressure sustained by a healthy person during a single continuous sustained inspiration or expiration.

AG 13. (CURRENTLY AMENDED) The respiratory apparatus of claim 6 wherein said display adjusting circuit means is adapted to determine a short term average value of said respiration signal based on a short time period, said display adjustment adjusting circuit means being constructed and arranged to adjust said respiration signal when the difference between said short term average value and the predetermined threshold exceeds a predetermined threshold value for at least a predetermined duration.

14. (CURRENTLY AMENDED) A method for presenting a respiration signal indicative of the patient's breathing pattern in a respiratory apparatus adapted to provide a flow of pressurized air to a patient; ~~a method for presenting a respiration signal indicative of the patient's breathing pattern~~, the method comprising:

determining a parameter within the device related to the flow of pressurized air and the breathing of the patient;

adjusting said parameter based on a baseline signal to generate a respiration signal within a predetermined display range based on an average value of said respiration signal; and displaying said respiration signal.

15. The method of claim 14 further comprising, taking a difference between said baseline signal and said parameter to derive an adjusted signal.

16. The method of claim 15 further comprising determining an absolute difference between said average value and said baseline signal and if said absolute difference is not less than a first threshold, then setting said baseline signal to said average value.

17. The method of claim 16 wherein said average value is calculated over a period

longer than a typical breath of a person.

51 18. The method of claim 17 wherein said average value is calculated over a period of about 12 seconds.

19. The method of claim 16 wherein said first threshold is related to said predetermined range.

20. The method of claim 19 wherein said first threshold is a fraction of said predetermined range.

21. The method of claim 16 wherein said average value is taken over a period which is not longer than a typical breath of a person.

22. The method of claim 21 wherein said average value is taken over a period which is much shorter than a typical breath of a person.

Alt 23. (CURRENTLY AMENDED) The method of claim 22 wherein ~~said duration~~ the period is about 0.5 sec.

24. The method of claim 23 wherein said first threshold is related to a minimum pressure maintained by a person during a single continuous inspiration or expiration.

25. The method of claim 14 wherein said parameter is the pressure at which air is provided to the patient.

A7 26. (CURRENTLY AMENDED) A method of keeping a respiratory signal from a patient within a predetermined dynamic range of an output/display unit comprising the steps of:
determining a parameter indicative of the patient's respiration; and
automatically adjusting a presentation of said parameter based on a baseline signal to generate the respiration signal within said predetermined dynamic range of an output display unit.

27. The method of claim 26 further comprising automatically adjusting said parameter

when said parameter is outside said predetermined range for a predetermined duration,.

28. The method of claim 27 wherein said predetermined duration is long compared with the duration of a typical patient inspiration.

29. The method of claim 27 wherein said predetermined duration is long compared with the duration of a typical patient expiration

30. The method of claim 27 wherein said predetermined duration is approximately 6 seconds.

A7 31. (NEW) A respiratory apparatus for displaying a respiration signal indicative of a patient's breathing pattern during delivery of airway pressure treatment comprising:
a pressure transducer to generate a pressure signal proportional to pressure in a patient airway treatment interface, wherein the transducer is coupled to the patient airway treatment interface;
a processor coupled to receive the pressure signal, wherein the processor includes programmed control instructions, said instructions controlling display adjusting steps for restricting a presentation of a respiration signal within a predetermined display range by generating a baseline signal from at least one average of the pressure signal;
a summer coupled to receive the pressure signal and baseline signal to generate the respiration signal;
an amplifier coupled to the summer; and
a display screen coupled to the amplifier to present the respiration signal in the predetermined display range.

32. (NEW) The apparatus of claim 31 wherein the programmed control instructions further control the step of generating the baseline signal by selecting a particular average from a plurality of averages taken over different averaging periods, wherein the selecting of the particular average is a function of a set of conditions.

33. (NEW) The apparatus of claim 32 wherein the set of conditions comprises a threshold comparison of a difference between a current baseline signal and one average from the plurality of averages.

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34. (NEW) The apparatus of claim 33 wherein the set of conditions further comprises a time period during which the threshold comparison must be satisfied in the selecting of the particular average.

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